

CLAIMS

1. A dry air supplying apparatus, comprising:

two rotors respectively supported by support frames, each of the rotors having a component member carrying an absorbent;

partitioning members respectively supported by the support frames, each of the partitioning members defining at least an absorbing zone and a recovery zone in the rotor corresponding to the partitioning member, depending on an angular positional relationship between the rotor and the corresponding partitioning member, wherein, in the absorbing zone, moisture and organic matters are removed from air passing therethrough by the absorbent in the absorbing zone, and in the recovery zone, the absorbent deteriorated due to absorption of the moisture and the organic matters is recovered;

a common drive means for driving both the rotors for rotation;

a circulation passage that guides air sucked from a target space so as to sequentially pass through the absorbing zones of the rotors for removing moisture and organic matters from the air, and thereafter return to the target space; and

an exhaust passage, provided with heating means, that guides a part of the air having passed through the absorbing zones of the rotors so as to pass through the heating means, and thereafter pass through the recovery zones of the rotors for desorbing the moisture and the organic matters from the absorbents of the rotors.

2. A processing system comprising:

a processing unit adapted to perform a predetermined process to a process object;

a transfer space in which a process object to be processed by the processing unit or a process object having been processed by the processing unit is conveyed; and

a dry air supplying apparatus adapted to supply air, from which moisture and organic matters are removed, into the transfer space; said dry air supplying apparatus including:

two rotors respectively supported by support frames, each of the rotors having a component member carrying an absorbent;

partitioning members respectively supported by the support frames, each of the partitioning member defining at least an absorbing zone and a recovery zone in the rotor corresponding to the partitioning member, depending on an angular positional relationship between the rotor and the corresponding partitioning member, wherein, in the absorbing zone, moisture and organic matters are removed from air passing therethrough by the absorbent in the absorbing zone, and in the recovery zone, the absorbent deteriorated due to absorption of the moisture and the organic matters is recovered;

a common drive means for driving both the rotors for rotation;

a circulation passage that guides air sucked from the transfer space so as to sequentially pass through the absorbing zones of the rotors for removing moisture and organic matters from the air, and thereafter return to the transfer space; and

an exhaust passage, provided with heating means, that guides a part of the air having passed through the absorbing zones of the rotors so as to pass through the heating means, and thereafter pass through the recovery zones of the rotors for desorbing the moisture and the organic matters from the absorbents of the rotors.

3. The processing system according to claim 2, wherein:

cooling means is arranged in the circulation passage between a former-stage rotor and a latter-stage rotor of said two rotors, for cooling air having passed through the absorbing zone of the former-stage rotor;

the partitioning member corresponding to the latter-stage rotor is configured to define, in the latter-stage rotor, a cooling zone in which the component member carrying the absorbent is cooled, in addition to the absorbing zone and the recovery zone; and

the exhaust passage is configured to guide air, having passed through the former-stage rotor, the cooling means and the latter-stage rotor, to pass through the cooling zone of the latter-stage rotor before the air passes through the recovery zones of the former-stage rotor and latter-stage rotor and the heating means.

4. The processing system according to claim 2, wherein an outlet portion of the circulation passage connected to the transfer space is provided with a filter in order to remove particles generated at contact points between the rotors and the partitioning members.

5. The processing system according to claim 2, wherein the drive means has two belt wheels to drive the two rotors for rotation via endless belts, respectively, and the two belt wheels have different diameters so that the two rotors rotate at different speeds.

6. The processing system according to claim 2, wherein the exhaust passage is provided with a common heating means to heat air to be supplied respectively to the recovery zones of the two rotors.

7. The processing system according to claim 2, further comprising:

a dew-point meter adapted to measure a dew point of an atmosphere of the transfer space;

a dry air controller adapted to control the dry air supplying apparatus based on a measured result by the dew-point meter so that the dew point in the transfer space is

maintained at a predetermined value.

8. The processing system according to claim 2, wherein:

the partitioning member includes a circumferential element arranged in correspondence to a periphery of an end portion of the rotor, and a plurality of radial elements extending from a center of the circumferential element to the circumferential element to divide a space surrounded by the circumferential element into a plurality of zones; and

a fin-shaped, flexible sealing member is attached to each of the radial elements, the sealing member is pressed against an end face of the rotor facing the sealing member, and each of the sealing member is configured so that the sealing member slides on the end face of the rotor facing the sealing member while a tip of the sealing member is resiliently bent towards a rotation direction of the rotor facing the sealing member;

whereby air having passed through the different zones of each of the rotors is prevented from being mixed to each other.

9. The processing system according to claim 8, wherein the circumferential element of each of the partitioning members is provided with a circumferential packing member to be pressed against a peripheral edge or an outer circumference of the rotor facing the circumferential element, and a slip sheet is adhered to a contact surface of the packing member facing the rotor corresponding to the packing member.

10. The processing system according to claim 2, wherein:

the drive means is configured to intermittently rotate the two rotors; and

the partitioning member is configured to leave an end face of the rotor facing the partitioning member when the rotor is rotating, and contact the end face of the rotor when the rotor halts rotation.

11. The processing system according to claim 2, wherein the

dry air supplying apparatus is connected to a transfer space of another processing system.